STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: September 19, 2018

FROM: Sarah Large
Wetlands Program Analyst

AT (OFFICE): Department of Transportation
Bureau of Environment

SUBJECT Dredge & Fill Application
Westmoreland, 41394

TO Gino Infascelli, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Maintenance for the subject major impact project. This project is classified as major per Env-Wt 303.02(p). The project is located on NH Route 63 in the Town of Westmoreland, NH. The proposed work consists of replacing the deck of the existing 10' span bridge (109/061) that carries NH 63 over Branch Partridge Brook as well as minor repairs to all of the bridge abutments and placing riprap at the SE wingwall for scour protection.

This project was reviewed at the Natural Resource Agency Coordination Meeting on May 17, 2017. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm

Mitigation is not proposed for this project as the work is entails stabilization and protection of the existing infrastructure.

The lead people to contact for this project are Steve Johnson, Assistant Administrator, Bureau of Bridge Maintenance (271-3668 or steve.johnson@dot.nh.gov) or Sarah Large, Wetlands Program Analyst, Bureau of Environment (271-3226 or sarah.large@dot.nh.gov).

A payment voucher has been processed for this application (Voucher #542871) in the amount of $403.60.

If and when this application meets with the approval of the Bureau, please send the permit directly to Matt Urban, Wetlands Program Manager, Bureau of Environment.

SEL:sel
Enclosures

cc:
BOE Original
Town of Westmoreland (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)

S:\Environment\PROJECTS\WESTMORELAND\41394\WETAPP - Bridge Maintenance.doc

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.
			Check No.
			Amount
			Initials

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: 5 Day: 17 Year: 2017

☒ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **NH 63**			TOWN/CITY: **Westmoreland**
TAX MAP:	BLOCK:	LOT:	UNIT:

USGS TOPO MAP WATERBODY NAME: **Branch Partridge Brook** ☐ NA STREAM WATERSHED SIZE: **1.5** ☐ NA

LOCATION COORDINATES (If known): **42` 56' 42.4",72` 26' 49.6"** ☒ Latitude/Longitude ☐

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The existing bridge carrying NH 63 over Branch Partridge Brook (109/061) is a Concrete Box with a clear span of 10'. The purpose of the project is to replace the existing bridge deck, perform minor repairs on the abutments and place a minimal amount of riprap at the SE for scour protection.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☒ NO	_____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☒ NO	_____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☒ NO	_____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☐ YES ☒ NO	_____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 18 - 1682

b. ☐ Designated River the project is in ¼ miles of: _____ ; and
date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____
☒ N/A

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Johnson, Steve, W**			
TRUST / COMPANY NAME: **NH Dept. Of Transportation**	MAILING ADDRESS: **7 Hazen Drive; PO Box 483**		
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **Steve.Johnson@dot.nh.gov**	PHONE: **271-3667**		

ELECTRONIC COMMUNICATION: By initialing here: SWJ, I hereby authorize NHDES to communicate all matters relative to this application electronically

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **NH Dept. of Transportation**			
TRUST / COMPANY NAME: **NH Dept. of Transportation**	MAILING ADDRESS: **PO Box 483**		
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **Sarah.Large@dot.nh.gov**	PHONE: **603-271-3226**		

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.:	COMPANY NAME:		
MAILING ADDRESS:			
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:	PHONE:		

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

Steve W Johnson Property Owner Signature	**Steve W. Johnson** Print name legibly	9/18/18 Date

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

⇨ Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

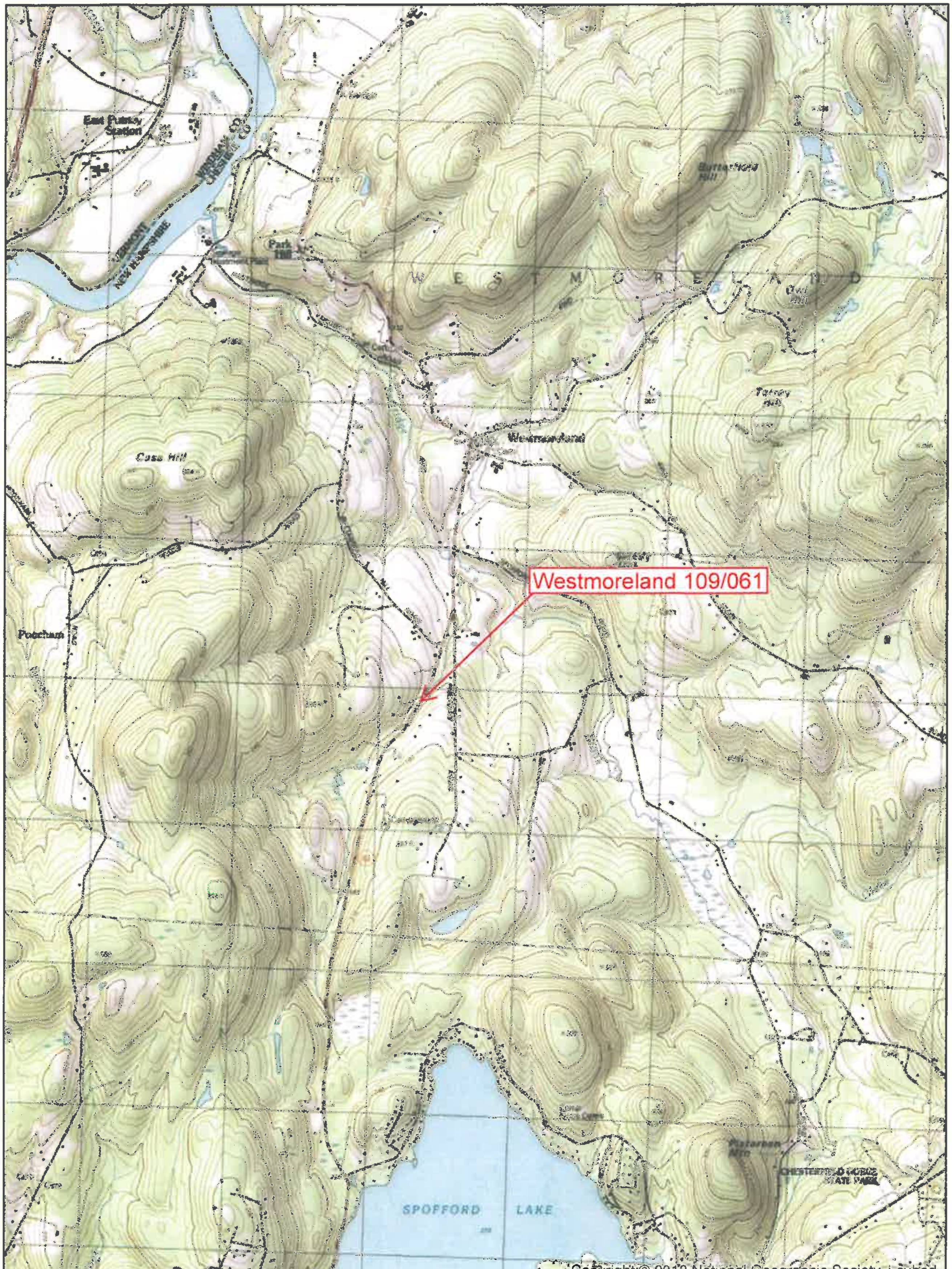
14. IMPACT AREA:
For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact
Permanent: impacts that will remain after the project is complete.
Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	41	☐ ATF	190	☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	86 / 90	☐ ATF	831 / 85	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	10 / 22	☐ ATF	860 / 82	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	137 / 112		1881 / 167	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200
☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	**2018** sq. ft.	X	$0.20 =	**$ 403.60**
Temporary (seasonal) docking structure:	sq. ft.	X	$1.00 =	$
Permanent docking structure:	sq. ft.	X	$2.00 =	$
Projects proposing shoreline structures (including docks) add $200 =				$
			Total =	**$ 403.60**
The Application Fee is the above calculated Total or $200, whichever is greater =				**$ 403.60**



N

0 0.225 0.45 0.9 1.35 1.8
Miles

SCALE 1:24,000

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The bridge carrying NH 63 over Branch Partridge Brook is cracked, spalled, leaking and in need of repair. It is necessary to impact jurisdictional areas to access the bridge to provide for the repairs. The final bridge will better match the roadways connected to it. The impacts are for the temporary scaffolding for the new concrete deck as well as riprap at the base of the southeast wingwall. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

The alternatives considered are as follows:

Replace the structure with a new structure in compliance with the NH Stream Crossing Rules: According to the NH Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 20'-0. A structure of this size would cost approximately $850,000. Spending this much money on a structure that could be adequately preserved for approximately $200,000 would not be a practicable use of resources.

Replace existing concrete deck and protect substructure: This is the proposed alternative. The structure can be preserved by removing the concrete deck and replacing it, placing riprap at the SE bank and wing, and patching the abutments. The project as proposed has an estimated cost of $200,000. This is the most cost effective solution while minimizing existing wetland impacts.

In the May 17th, 2017 Natural Resource Agency Coordination Meeting no concerns with this project were raised.

3. The type and classification of the wetlands involved.

R2UB12-Riverine Lower Perennial Unconsolidated bottom cobble gravel, sand

PFO1E-Palustrine Forested Deciduous Seasonally Flooded

Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Branch Partridge Brook flows into Partridge Brook which then flows into the Connecticut River.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Branch Partridge Brook has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

917 sq. ft. Riverine (831 sq. ft. temporary, 86 sq. ft. permanent)

869 sq. ft. Bank (860 sq. ft. temporary, 10 sq. ft. permanent)

231 sq. ft. Palustrine (190 sq. ft. temporary, 41 sq. ft. permanent)

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a) There were no rare or special concern species identified other than those listed below.

b) Through the U.S. Fish and Wildlife Service IPaC (05E1NE00-2018-SLI-1990) the threatened Northern Long-eared Bat was listed as a "Threatened" species. The proposed work will not remove any trees greater than 3" in diameter at breast height. A 4(d) consultation form indicating that the proposed work may affect the NLEB, but that any incidental take of the NLEB is not prohibited by the final 4(d) rule has been sent to US Fish & Wildlife Services and ACOE. The Department has coordinated with DRED and the results of the NHB review revealed there was no record in the area.

c) There are no species known to be at the extremeties of their ranges located in the project area.

d) Migratory fish will not be affected due to this project. During construction, streamflow will be maintained with sandbag cofferdams unimpeded. Migratory wildlife will not be affected as a result of this project.

e) The Department has coordinated with DRED and results of the NHB review revealed no record of state listed species.

f) There were no vernal pools identified within the project limits.

8. The impact of the proposed project on public commerce, navigation and recreation.

The proposed project will use phased construction to maintain one lane traffic along NH 63. There are no recreational areas that have been identified in this area. Branch Partridge Brook is a non-navigable water which makes it non-conducive to boaters. When construction is completed, the proposed project will benefit the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The proposed project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will either be regarded as more pleasing to the eye than the existing structure, or will go unnoticed.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct rights of passage or access. During construction, traffic will be maintained at all times. Upon completion of the proposed project the road will be returned to full lane width.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road, and the project will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc. for the general public.

13. The impact of a proposed project on quantity or quality of surface and groundwater. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The surface water currently runs off the road, over natural vegetation along the edge of the road and banks of the water body, and/or off the headwalls and wingwalls into the waterbody. Upon completion of the project, surface water will drain in the same manner. The proposed work will not change the quality or quantity of surface and groundwater within the project limits. Best Management Practices will be used to prevent any adverse effects on water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Flooding: Replacing the concrete deck will not have an effect on the structure's ability to pass the 100 year storm event.

Erosion: Placing riprap at the base of the wingwalls will prevent erosion.

Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project. The bridge will continue to pass and transport sediment at it does currently. Velocities through the structure will remain the same.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Surface waters will not be reflected or redirected as a result of this project. Branch Partridge Brook does not have enough surface area for wave energy to be an issue.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The value of the wetland as a habitat for living organisms will not be changed as a result of this project. A function of Branch Partridge Brook is to carry water from a higher elevation to a lower elevation. This project will not interfere with that function.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

The project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of Congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no areas named in an act of Congress or Presidential proclomations as national rivers, national wilderness areas, or national lakeshores that will be impacted as a result of this project.

20. The degree to which a project redirects water from one watershed to another.

The project as proposed will not redirect water from one watershed to another.

Additional comments

NOTES ON CONFERENCE:

Finalization April 19th, 2017 Meeting Minutes
Matt Urban asked the group if they had any additional comments for the April 19th, 2017 meeting. BOE had received comments from only Amy Lamb and Steve Johnson. The group did not have any further revisions. The minutes were finalized and posted in a subsequent day.

Westmoreland, #41394 (Non-federal)
The purpose of the project is to replace the existing bridge deck, perform minor repairs on the abutments and place a minimal amount of riprap.

Steve Johnson presented an overview stating that the bridge carries NH 63 over Branch of Partridge Brook with an upstream drainage area of 1.5 square miles. The existing structure is a Red-Listed concrete box with a 10' x 6'-2" opening. The bridge was constructed in 1935 and rebuilt in 1978. There were no NHB records in this area. The roadway was overtopped when debris blocked the stream during an event in 2008, but the structure appears to be hydraulically adequate for the 100 year flood flow.

Slides of the upstream and downstream elevations were shown along with slides of the project area on an aerial photograph, the northwest wing riprap, southeast wing riprap, downstream erosion, and the existing bridge deterioration. A conceptual wetland impact drawing was shown with temporary impacts to divert the brook during construction and permanent impacts 1' out along the bottom of the box walls to enable repairs at the bottom of the box.

Carol Henderson asked that a cofferdam be used longitudinally under the structure to allow fish passage instead of a pipe to divert the stream flow. Riprap was discussed, Gino Infascelli agreed that riprap beyond the bridge to address bank erosion was not needed. Riprap impacts will be limited to repairs to the riprap at the southeast wingwall. Because this is protection of an existing structure and additional riprap will not be installed, it was agreed that mitigation would not be required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Derry, #40572 (Non-federal)
The purpose of this project is to repair undermining under the west abutment, and install riprap to protect the structure.

Steve Johnson presented an overview stating the bridge carries Hampstead Road over an unnamed Brook with a drainage area of 0.6 square miles. The existing structure is a concrete slab bridge with a 10'-6" x 4' opening. The bridge was constructed in 1924 and rebuilt in 1986. An NHB review indicated Blandings Turtles and Spotted Turtles in the area. An emergency permit was issued in 2008 (2008-02638) to address the undermined east abutment. The west abutment is now beginning to undermine, so we are proposing to repair the west abutment and place riprap in front of both abutments and the wingwalls.

Westmoreland, #41394 Mitigation Summary

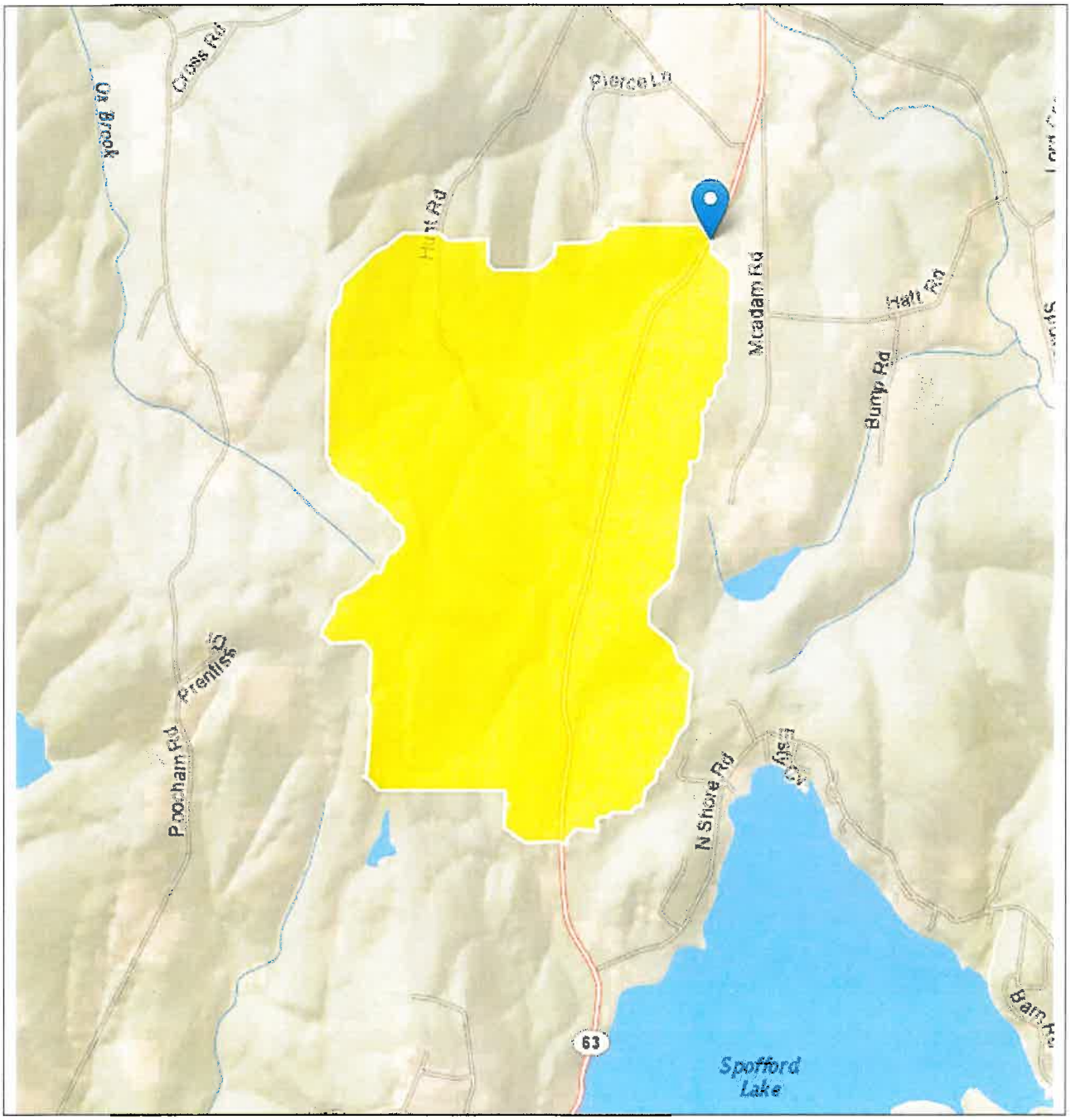
The Department is proposing to replace the deck of bridge 109/061 that carries Branch Partridge Brook under NH Route 63 as well as perform minor repairs to the abutments of the bridge, and place a minimal amount of riprap along the bank of the SE wing for scour protection. At the May 17, 2017 Natural Resource Agency Meeting the group discussed mitigation needs related to the abutment repairs and minimal riprap. Per the discussions the Department does not propose to mitigate for the permanent impacts along the abutments of the bridge or the riprap at the SE wing as both are maintenance activities needed to protect the existing infrastructure. Riprap currently exists along the SE wingwall.

Hydraulic Data

Drainage Area – 1.53 square miles

Flow – Q 100 = 307 cfs

The proposed structure will pass the 100 year flood.



Watershed Boundaries Map

NH Department of Transportation
Bureau of Bridge Maintenance
Project, # 41394
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as *available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.)*

At this location Branch Partridge Brook has a drainage area of 1.53 square miles which qualifies this as a Tier 3 Crossing. The required span based on NH Stream Crossing Rules for a new crossing is 20'-0. A structure of this size would cost approximately $850,000. Spending this much money on a structure that could be adequately preserved for approximately $200,000 would not be a practicable use of resources.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:

(a) In accordance with the NH Stream Crossing Guidelines.

The NH Stream Crossing Rules do not mention maintenance to a structure in a Tier 3 watershed; however, the proposed work has been designed to meet the minimum design criteria outlined in Env-Wt 904.5 (see 2b through 2g) to the maximum extent practicable. The Department has designed the maintenance work to support aquatic organism passage and stream connectivity, but it is impracticable to replace the crossing with a structure that is a fully compliant size at this time due to constraints of maintenance work.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

Water depths and velocities within the crossing at a variety of flows will be comparable to the existing depths and velocities. These flows are comparable to those found in the natural channel upstream and downstream of the stream crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

It is not possible to provide vegetated banks below the structure as the structure does not span the water course's banks. Upsizing the crossing is not within the scope of this project. It is not possible to vegetate with shrubs/woody vegetation on the banks immediately in front of critical sections of infrastructure,

such as wingwalls, because over time as large vegetation grows in and around riprap their roots and the possibility of treefalls can threaten the integrity of the riprap.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The natural alignment and gradient of the stream channel will not be changed as a result of this project.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

The project as proposed will not alter the chance of flooding on abutting properties. The existing and proposed repair to the structure will not continue to pass the 100 year flood flow. Sediment transport characteristics will not change as a result of the repairs.

(f) To simulate a natural stream channel.

The majority of the stream channel under the structure is currently a natural bottom. The riprap added to the SE wing is only to improve upon the armoring of the substructure and will not be placed throughout the structure. Riprap currently exists along this bank and wing for scour protection.

(g) So as not to alter sediment transport competence.

Sediment transport competence will not be changed as a result of this project.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01
(a) Not be a barrier to sediment transport;

Nothing that will be a barrier to sediment transport will be installed in this project.

(b) Prevent the restriction of high flows and maintain existing low flows;

High flows will not be restricted and low flows will be maintained as a result of this project. The project as proposed will not have any effect on the structures ability to pass the 100 year storm event.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

The movement of aquatic life indigenous to the water body will not change as a result of this project.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The project as proposed will have no effect on the hydraulic capacity of the structure. High flows will not be restricted. The frequency of flooding or water overtopping the roadway or banks at the structure will not change due to the proposed work.

(e) Preserve watercourse connectivity where it currently exists;

Connectivity will not be changed as a result of this project. The existing crossing currently preserves watercourse connectivity.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

The watercourse is currently connected and the proposed work will not change this as a result of this project. Aquatic life passage upstream or downstream of the crossing will not be affected as a result of this project.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

The project will not cause erosion, aggradation, or scouring upstream or downstream of the crossing. The placed riprap at the corner of the wingwall is intended to prevent scour along the banks of the water body and at the wingwall to prevent excessive sediment transport and erosion in the future

(h) Not cause water quality degradation.

The project as proposed will not impact the quantity or quality of surface and/or groundwater at this site. Storm water and surface water runoff will continue to sheet flow to the water body off the road and banks the way it does currently. Best Management Practices will be used to prevent any adverse effect to the water quality during construction.

*****Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the *maximum extent practicable.***

New Hampshire Natural Heritage Bureau

To: Douglas Locker
7 Hazen Drive
Concord, NH 03302

Date: 6/1/2018

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 6/1/2018

NHB File ID: NHB18-1682

Applicant: Steve Johnson

Location: Tax Map(s)/Lot(s):
Westmoreland

Project Description: The purpose of this project is to replace the deck, perform minor repairs to the abutment, and to place minimal riprap

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

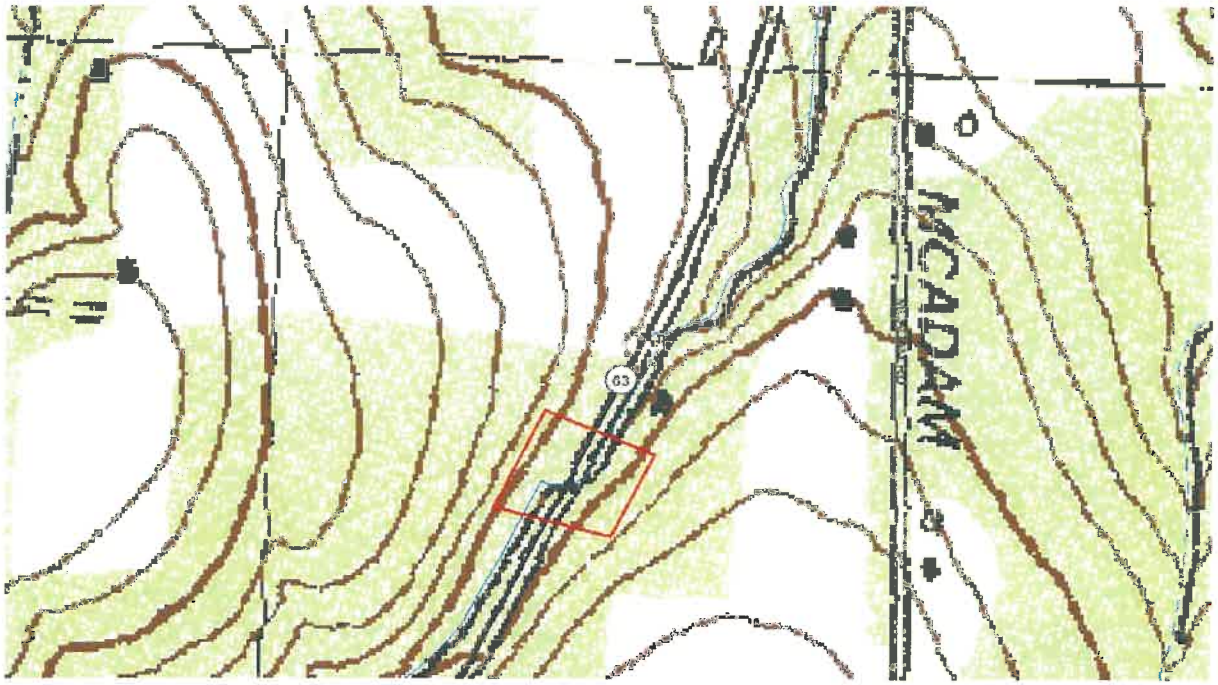
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 5/31/2019.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB18-1682



Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-1990
Event Code: 05E1NE00-2018-E-04695
Project Name: Westmoreland 109/061

June 05, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-1990

Event Code: 05E1NE00-2018-E-04695

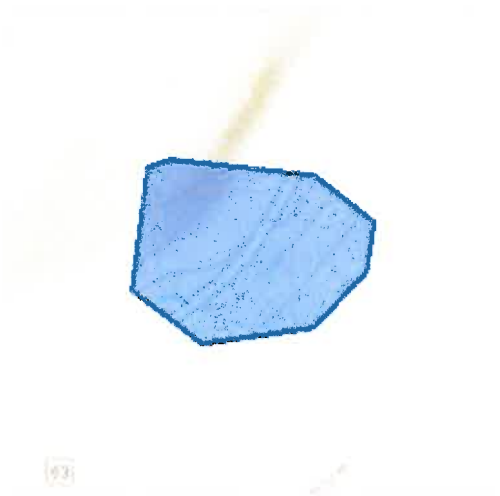
Project Name: Westmoreland 109/061

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Rehabilitate the bridge carrying NH 63 over Branch Partridge Brook.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.94360648485552N72.44820315173774W



Counties: Cheshire, NH

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

IPaC Official Species List Consultation Code: **05E1NE00-2018-SLI-1990**

Information to Determine 4(d) Rule Compliance:	YES	NO
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☒
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☒	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☒
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☒
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☒
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☒

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3] (Name, Email, Phone No.): Sarah Large, NH Department of Transportation Sarah.Large@dot.nh.gov, (603) 271-3226
Project Name: Westmoreland, #41394
Project Location (include coordinates if known): NH Route 63 over Branch Partridge Brook
Basic Project Description (provide narrative below or attach additional information): **The existing structure is a concrete 10'x6' open bottom box. Proposed work consists of replacing the concrete deck, performing minor repairs on the abatements and placing a minimal amount of riprap near the SE wing of the bridge. No tree clearing is needed for the work to be performed.**

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☒
Does the project occur within 150 feet of a known maternity roost tree?	☐	☒
Does the project include forest conversion[4]? (if yes, report acreage below)	☒	☐
Estimated total acres of forest conversion	< 0.1	
If known, estimated acres[5] of forest conversion from April 1 to October 31	< 0.1	
If known, estimated acres of forest conversion from June 1 to July 31[6]	0	
Does the project include timber harvest? (if yes, report acreage below)	☐	☒
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☒
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☒
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Sarah Large Date Submitted: 9/17/18

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Proposed Project: Due to cracking, spalling and leaking, the proposed project for an existing concrete box bridge (109/061) carry NH 63 over Branch Partridge Brook (109/061); with a 10' by 6'2" opening) consists of replacing the bridge deck, performing minor patching repairs on the abutments, and placing a minimal amount of riprap at the southeast wingwall, to

Above Ground Review

Known/approximate age of structure:
Constructed 1935, rebuilt in 1978 when the bridge was widened and the rails replaced

☒ No Potential to Cause Effect/No Concerns

Although this is not a federal project, the proposed actions including the replacement of the concrete deck and addition of rip rap for this 1935/1978 bridge aligns with the 2018 Programmatic Agreement:

APPENDIX A – No Potential to Cause Effects –
Bridge maintenance and repair on bridges less than 50 years old

APPENDIX B – Activities with Minimal Potential to Cause Effects
6. Bridge deck preservation and replacement, as long as no character defining features are impacted
7. Non-historic bridge and culvert maintenance, renovation, or total replacement, that may require minor additional right-of-way or easement, including:
a. replacement or maintenance of non-historic bridges

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐Yes ☒No

Nearest Recorded Archaeological Site Name & Number: 27-CH-0084 Chickering Farm Site
☒Pre-Contact ☐Post-Contact

Distance from Project Area: 4.45 miles (7.16 km) southwest of project area

☐ No Potential to Cause Effect/No Concerns

The proposed actions will match the roadways connected to the bridge. The temporary scaffolding for the new concrete deck and addition of riprap at the base of the southeast wing wall do not comprise impacts to potentially undisturbed areas.

☐ Concerns:

Reviewed by: Sheila Charles and Jillian Edelmann

Sheila Charles

NHDOT Cultural Resources Staff

9/13/2018

Date

US Army Corps of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

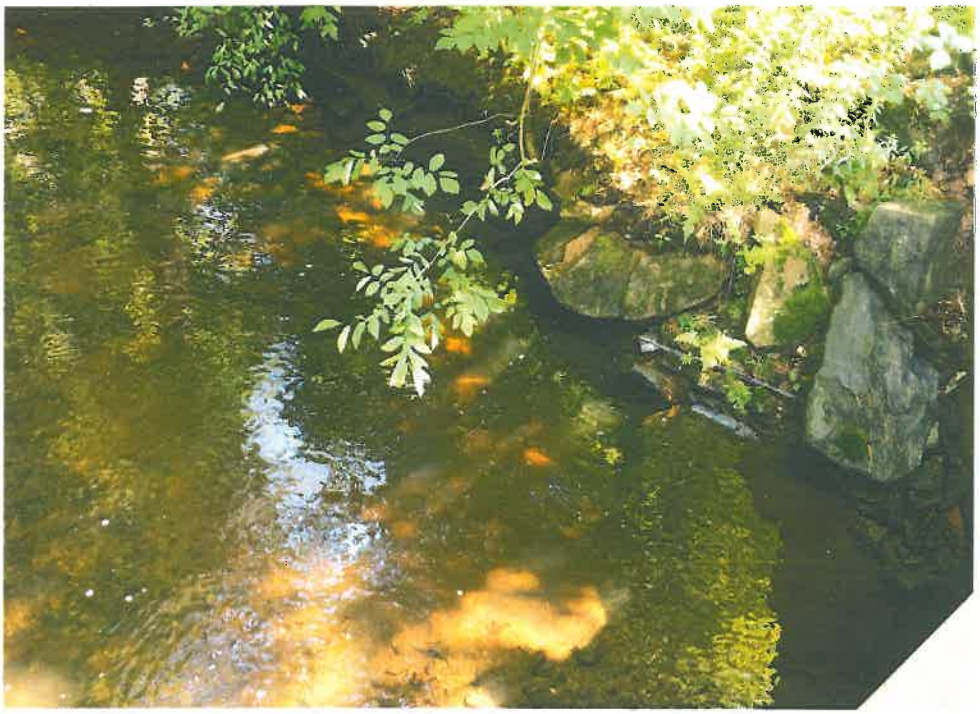
1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	1601 sq. ft.	
2.7 What is the size of the proposed impervious surface area?	1601 sq. ft.	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	28.6%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Northwest Wingwall

Southwest Wingwall and Upstream Channel



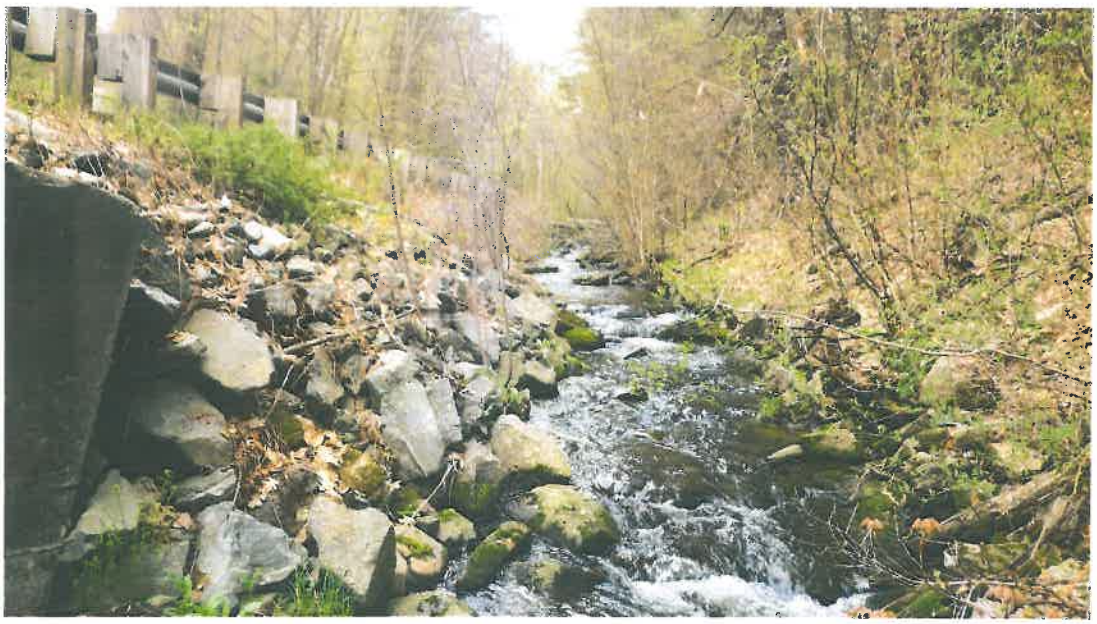
Southeast Bank and Downstream Channel

Northeast Wingwall and Downstream Channel

Southeast Bank and Downstream Channel

Facing the Outlet

Upstream Channel and Northwest Wingwall



Upstream Channel

Facing the Inlet

Downstream Channel

CONSTRUCTION SEQUENCE

1. At normal to low flow, a sandbag cofferdam will be placed within the stream. The stream will be diverted to one side of the cofferdam.
2. The work zone will be dewatered or contained.
3. Temporary scaffolding will be placed in the brook and the deck will be replaced.
4. Riprap will be placed at the SE wingwall behind natural buffer/perimeter control.
5. All dewatering devices will be removed and the site will be restored to its original quality.

Note: The Project will utilize BMP's from the Best Management Practices manual during all phases of construction.

Env-Wt 404 Criteria for Shoreline Protection

The rehabilitation of the bridge that carries Rte. 63 over Branch Partridge Brook proposes the placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel and along the bank of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Wt 404.02 Diversion of Water

The project is proposing to use a clean water bi-pass which will divert the water away from the work areas allowing crews to work in a dry environment. Any water that enters the closed off system will be pumped to a sediment basin to allow for sediments to settle out before the water is re-introduced to the brook. Other BMP's will establish erosion control measures to provide protection to the site.

Wt 404.03 Vegetative Stabilization

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, which will help stabilize the project area.

Wt 404.04 Rip-Rap

(a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.

(b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill.

(b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.

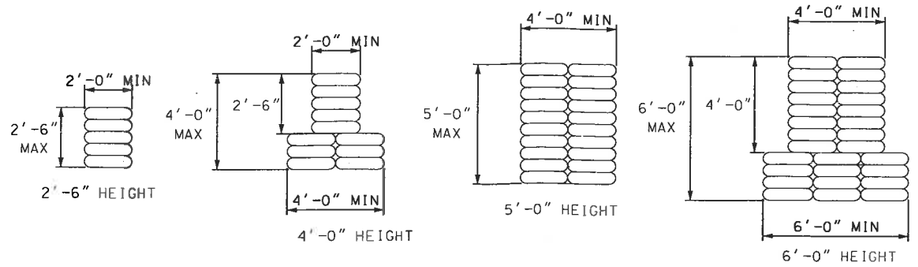
(b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 have difficulty supporting vegetation.

(c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.

(d) Stone fill is proposed to extend down to and adequately keyed into the channel bottom to prevent possible undermining of the slope.

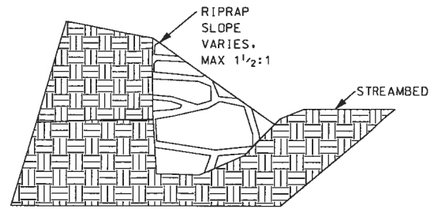
(e) The enclosed plan has been stamped by a professional engineer.

RIPRAP GRADATION
D15 < 16"
D50 < 21"
D100 < 36"
NOMINAL SIZE 18"



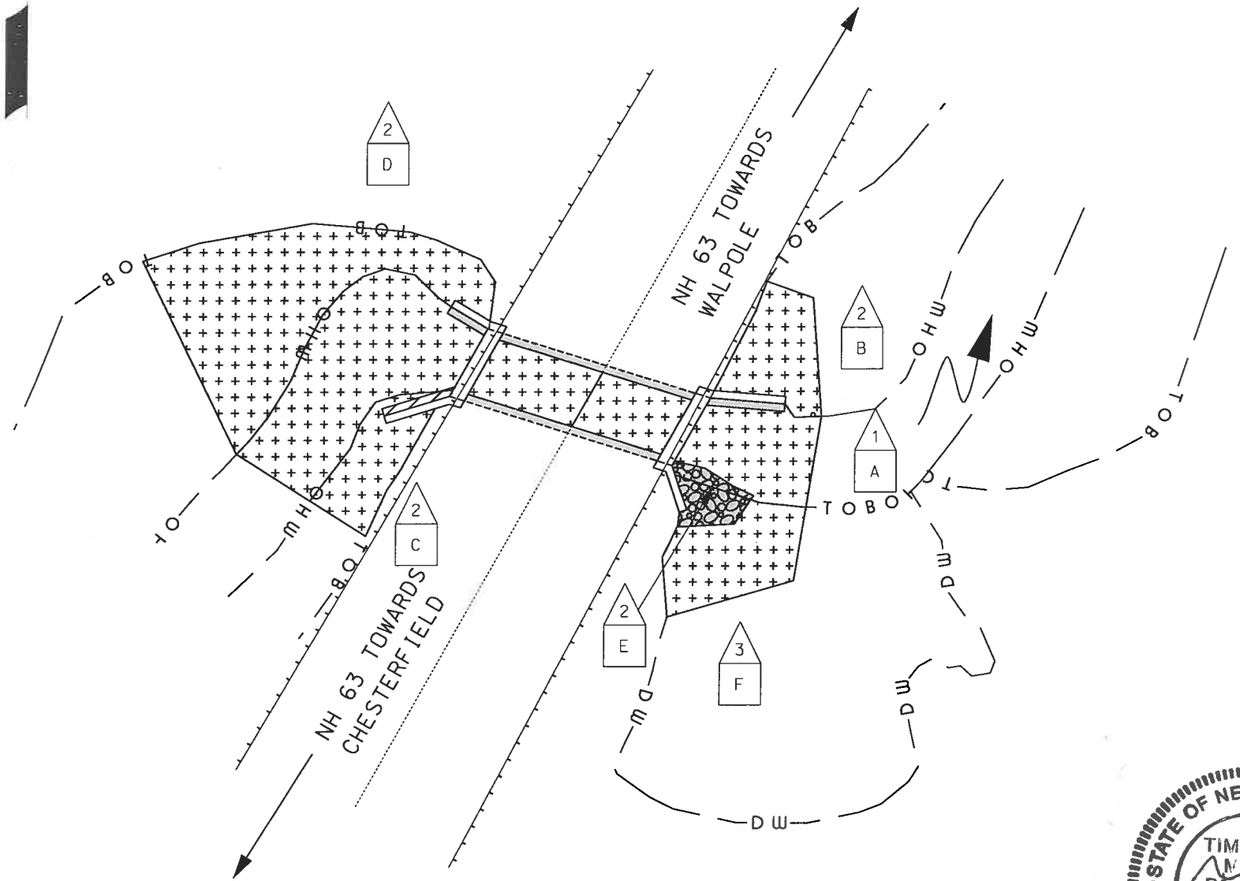
COFFERDAM DETAILS

NOT TO SCALE



SECTION A-A

NOT TO SCALE



WETLAND IMPACTS

1"=20'-0

10 0 10 20

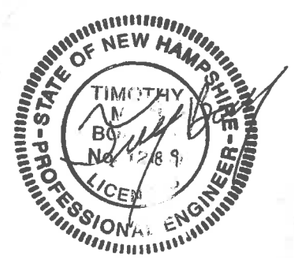
SCALE IN FEET

SEDIMENT BASIN

LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

WETLAND DESIGNATION NUMBER
WETLAND IMPACT LOCATION
WETLAND MITIGATION AREA
MITIGATION



DELINEATED BY S. LARGE MAY 2017

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN WESTMORELAND BRIDGE NO. 109/061 STATE PROJECT 41394

LOCATION NH 63 OVER BRANCH PARTRIDGE BROOK

WETLAND IMPACTS

BRIDGE SHEET 1 OF 3

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED			CHECKED		
DRAWN	DBL	7/28/17	CHECKED		
QUANTITIES			CHECKED		
ISSUE DATE					
REV. DATE					

FILE NUMBER WESTMORELAND 109/061

SHEET SCALE	FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
AS NOTED	2017		1	3

Westmoreland 109/061

WETLAND IMPACT SUMMARY												
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	R2UB12	A			86	90	831	85			
2	BANK	B					152	13			
2	BANK	C	10	10			128	25			
2	BANK	D					580	43			
2	BANK	E		12				8			
3	PFO1E	F			41		190				
		G									
		H									
		I									
		J									
		K									
		L									
	TOTAL		10	22	127	90	1881	174	0	0	0

PERMANENT IMPACTS: 137 SF
TEMPORARY IMPACTS: 1881 SF

TOTAL IMPACTS: 2018 SF

SUBTOTALS		PERMANENT				TEMPORARY	
		N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)			
CLASS	DESCRIPTION	SF	LF	SF	LF	SF	LF
R2UB12	RIVERINE	0	0	86	90	831	85
BANK	BANK	10	22	0	0	860	89
PFO1E	PALUSTRINE	0	0	41	0	190	0

WETLAND CLASSIFICATION CODES	
R2UB12	RIVERINE LOWER PERENNIAL UNCONSOLIDATED BOTTOM COBBLE GRAVEL, SAND
PFO1E	PALUSTRINE FORESTED DECIDUOUS SEASONALLY FLOODED
BANK	BANK

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN WESTMORELAND BRIDGE NO. 109/061 STATE PROJECT 41394

LOCATION NH 63 OVER BRANCH PARTRIDGE BROOK

WETLAND IMPACTS

BRIDGE SHEET 2 OF 3

REVISIONS AFTER PROPOSAL BY DATE

DESIGNED BY DATE CHECKED BY DATE

DRAWN DBL 7/28/17 CHECKED

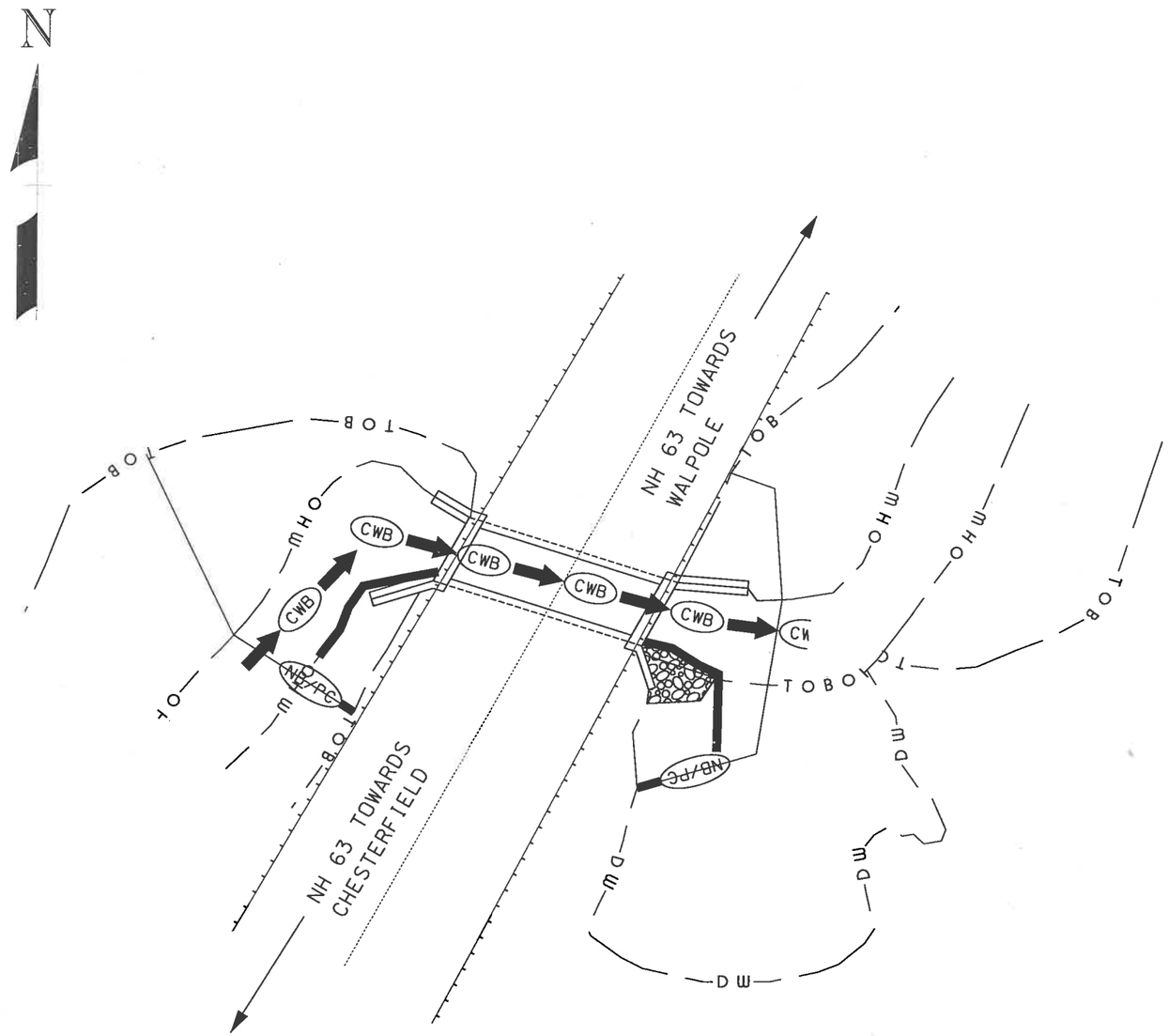
QUANTITIES CHECKED

ISSUE DATE FISCAL YEAR 2017 CREW SHEET NO. 2 TOTAL SHEETS 3

REV. DATE

FILE NUMBER

SHEET SCALE AS NOTED



EROSION CONTROL PLAN LEGEND

PC — PERIMETER CONTROL
- SILT FENCE
- EROSION CONTROL MIX BERM
- EROSION CONTROL MIX SOX
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM

NB/PC — NATURAL BUFFER/PERIMETER CONTROL
- SILT FENCE
- EROSION CONTROL MIX BERM
- EROSION CONTROL MIX SOX
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM

CP — CHANNEL PROTECTION
- STONE CHECK DAMS
- STRAW WATTLES
- CHANNEL MATTING
- CLASS D EROSION STONE
- CLASS C STONE

CWB — CLEAN WATER BYPASS
- PUMP THROUGH PIPE
- DRAIN THROUGH PIPE OR CHANNEL

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE

TOWN WESTMORELAND BRIDGE NO. 109/061 STATE PROJECT 41394

LOCATION NH 63 OVER BRANCH PARTRIDGE BROOK

EROSION CONTROL PLANS

BRIDGE SHEET 3 OF 3

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED			CHECKED		
DRAWN	DBL	7/28/17	CHECKED		
QUANTITIES			CHECKED		

ISSUE DATE		FISCAL YEAR	CREW	SHEET NO.	TOTAL SHEETS
REV. DATE		2017		3	3

FILE NUMBER WESTMORELAND 109/061

SHEET SCALE AS NOTED